



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,656	11/12/2003	Hong Gui	11166 (NCR.0114US)	8622
26890 7590 09/01/2010 JAMES M. STOVER TERADATA CORPORATION 2835 MIAMI VILLAGE DRIVE MIAMISBURG, OH 45342			EXAMINER TIMBLIN, ROBERT M	
			ART UNIT	PAPER NUMBER
			2167	
			MAIL DATE	DELIVERY MODE
			09/01/2010 PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/706,656

Applicant(s)

GUI ET AL.

Examiner

ROBERT TIMBLIN

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,8-13,15,16,19-22,24 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4,5,8-13,15,16,19-22,24 and 27-31 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/12/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-544)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action corresponds to application 10/706,656 which was filed on 11/12/2003.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 7/26/2010 has been entered.

Response to Amendment

In the response filed 7/26/2010, claims 1, 8-13, 19-22, 27 and 28 have been amended. Claims 3, 6-7, 14, 17-18, 23, and 25-26 have been cancelled and, subsequently, claims 29-31 have been newly added. Accordingly, claims 1, 2, 4, 5, 8-13, 15, 16, 19-22, 24 and 27-31 have been presented for prosecution.

Drawings

New formal drawings of Figures 1-4 in compliance with 37 CFR 1.121(d) are required in this application because the present drawings may be unclear given a quick glance and are of low quality. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Remarks

Examiner observes the use of the phrase "to enable" (claim 9, line 5) and "can be satisfied" (claim 10, lines 4-5).

Accordingly, the noted claims include language that suggests or makes optional recited steps to be performed. It is recommended that positive recitation of the above elements be included in the claims as to obviate the optionality and to therefore clearly define the scope of the subject matter.

Claim Objections

Claim 1, line 18 is objected to because "lest" should be "least". This objection is seen as a minor word misuse wherein appropriate correction is respectfully requested.

Claim 1 line 19, claim 13 line 18, and claim 22 line 18 recite "a predefined value to perform the hashing of the attributes of the second grouping set..." Therein, it is unclear if the predefined value is actually performing the hashing of the attributes, or the database software performs the hashing. For interpretation, the latter is used; however, clarification is respectfully requested.

Allowable Subject Matter

Claims 1, 2, 4, 5, 8-13, 15, 16, 19-22, 24 and 27-31 have been found allowable over the cited prior art of record.

The primary reason for indicating allowable subject matter of the claims is the inclusion of the limitation:

"distribute rows of the change to the first result set across the plural storage modules based on hash values computed by hashing the attributes of the second grouping set and at least one other attribute that is part of the first grouping set but not the second grouping set, wherein the at least one other attribute is assigned a predefined value to perform the hashing of the attributes of the second grouping set and the at least one other attribute".

This limitation as found in independent claim 1 and similarly independent claims 13 and 22 is not expressly taught or suggested alone or in combination by the prior art references.

Cochrane et al. (U.S. Patent Application 2003/0093407) relied upon in the previous Office Action under 35 U.S.C. 102(a) does teach grouping sets and further

maintaining views by visiting underlying tables; however, Cochrane does not readily teach or suggest the aforementioned limitation as it is recited among the specific claimed elements.

Upon further search of the amended claims that were submitted 7/26/2010 the following closest prior art that was found and their relevance are discussed below:

Luo et al. (U.S. Patent 7,181,452) in col. 5, lines 57-64, teaches partitioning a view ("join view") across a plurality of storage modules 14, a parallel processing system (see Fig. 2), and further updating a materialized view when the base relations are modified (col. 1 lines 47-48); however, the abovementioned limitation is not expressly or inherently found therein.

Agrawal et al. (U.S. Patent Application 2004/0260684) teaches hash partitioning materialized views (e.g. [0052]); however they do not expressly or inherently teach the abovementioned limitation.

Smith et al. (U.S. Patent 7,158,994) teaches a recursive process for materialized views wherein when a materialized view is refreshed, the secondary materialized views that stem from the materialized view are fully refreshed (col. 15 lines 49-66); however they do not expressly or inherently teach the abovementioned limitation.

Accordingly, in light of the above, the cited prior art herein do not teach alone or in combination the abovementioned limitation as it is recited in the combination of elements as found in claims 1, 13, and 22. The respective depending claims are deemed allowable for similar reasons as they depend from an allowable base claim.

Conclusion

Additional prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 7,181,450 issued to Malloy et al. The subject matter disclosed therein pertains to the pending claims (i.e. cube-based operations and grouping sets).

U.S. Patent 6,775,662 issued to Witkowski et al. The subject matter disclosed therein pertains to the pending claims (i.e. grouping sets).

U.S. Patent 7,058,640 issued to Le. The subject matter disclosed therein pertains to the pending claims (i.e. data cubes).

U.S. Patent 7,111,020 issued to Gupta et al. The subject matter disclosed therein pertains to the pending claims (i.e. partitioned materialized view).

U.S. Patent Application 2005/0027690 filed by Zhang et al. The subject matter disclosed therein pertains to the pending claims (i.e. cube operations and grouping sets).

Jose A. Blakeley , Per-Ake Larson , Frank Wm Tompa, Efficiently updating materialized views, Proceedings of the 1986 ACM SIGMOD international conference on Management of data, p. 1-11, May 28-30, 1986, Washington, D.C., United States.

Segev, A.; Park, J.; , "Updating distributed materialized views," *Knowledge and Data Engineering, IEEE Transactions on* , vol.1, no.2, pp.173-184, Jun 1989.

Cubetree: Organization of and Bulk Incremental Updates on the Data Cube (1997) by Nick Roussopoulos , Yannis Kotidis , Mema Roussopoulos Proceedings of the 1997 ACM SIGMOD Conference.

As allowable subject matter has been indicated, Applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

This application is in condition for allowance except for the following formal matters including the drawing and claim objections noted above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT TIMBLIN whose telephone number is (571)272-5627. The examiner can normally be reached on M-Th 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT TIMBLIN/
Examiner, Art Unit 2167